

CLIMATE CONTROLLED PORTABLE DWELLING AND METHOD OF USE

FIELD OF INVENTION

The present invention relates generally to climate control systems directed to regulating the ambient temperature within a portable dwelling, and more particularly to manufactured tents, after-market tent adapter kits and methods for utilizing these tents and adapter kits to regulate temperature preferably in the outdoors.

BACKGROUND OF THE INVENTION

Camping is a universally translatable activity that is enjoyed by friends and families the world over. Some choose to face the challenge of the outdoors as a reminder of simpler times. Others, however, go along with the rest of the family but are not as fond of leaving the creature comforts of home. No matter what reason brings the camper to the outdoors, most can recall an experience where they wish they only had some heat and/or air to make their sleeping experience a little more enjoyable.

As an alternative, many campers have chosen to purchase Recreation Vehicles (RVs) rather than endure the extreme hot or cold condition in tents. Another alternative is found in constructible protective shelters, which may have elaborate air purification and conditioning systems. Unfortunately, both of these alternatives are prohibitively expensive for most outdoor enthusiasts. Moreover, these alternatives generally and specifically RVs are not particularly suited for use in more remote locations. Moreover, individuals with existing

tents that they like would have to discard a perfectly good tent to opt for these alternatives.

Therefore, there remains an existing need for a tent that is configured to receive a standard window mountable air conditioning
5 and/or heating unit that allows for efficient climate control within the tent without allowing rain, snow or other elemental precipitants to penetrate the tent at the point of entry for the climate control unit. There is also a need for a kit that allows the owner of an existing tent to make after-market adaptations to their tent to provide the
10 features of the integrated tent. To this end, it would be preferable if the kit allowed for easy installation at an economically reasonable price.

SUMMARY OF EXEMPLARY EMBODIMENTS

In preferred embodiments, there is a principal objective to
15 provide a tent suitably configured to receive a portable climate control system. In the furtherance of this and other objectives, an exemplary tent provides an aperture through which the climate control system circulates conditioned air to the interior of the tent. Moreover, the climate control system itself is at least partially
20 covered so as to form a seal between the climate control system and the tent. This seal serves as a protective barrier and eliminates the intrusion of moisture into the tent or the climate control system itself.

Still another objective is to provide a kit that allows the above features and benefits of the climate-controlled tent to be integrated
25 into existing tents. In the furtherance of this and other objectives, the kit comprises a tent perforation template, flange coupling system and a boot to attach the climate control system to the existing tent and

provide a resealable aperture in the tent for receiving the conditioned air from the climate control system.

Yet another objective of select embodiments of the present invention is to provide a suitable backup power supply in the event
5 that the climate control tent is being utilized in a camping setting where a 110 outlet or equivalent power source is not available. It is preferable that such power source is compact yet powerful enough to support a climate control unit of about around 5,000-15,000 BTU's.

Further objectives, features and advantages of the invention
10 will be apparent from the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 is a perspective view of one side of an exemplary portable climate control unit and exemplary carrying device for use
15 with a climate control dwelling in accordance with the present invention.

FIG. 2 is a perspective view of the opposite side of the portable climate control unit and carrying device shown in FIG. 1.

FIG. 3 is a pictorial representation of a user affixing a miniature
20 flange to a portable climate control dwelling in accordance with specific embodiments of the present invention, in order to test the adhesive and find the center point for affixing the adapter. This view is principally of a portion of a standard tent showing the introduction of the kit for after-market modification of the dwelling.

25 FIG. 4 is an alternative pictorial view of an exemplary portable climate control dwelling, in accordance with the present invention, showing a flange attached to the dwelling to facilitate coupling of the dwelling with the climate control unit.

FIG. 5 is a perspective view of a climate control unit receiving boot, showing the boot engaged with the dwelling in a closed non-operational configuration.

FIG. 6 is a perspective view of the boot in a partially operational configuration showing the closure members that facilitate closure and stowing of the boot in particular and the dwelling generally.

FIG. 7 is a perspective view of the boot of FIG. 6 in which the boot is stretched and ready for receiving the portable climate control unit.

FIG. 8 is a perspective view of the exterior of a climate control dwelling showing the boot engaged about the climate control unit in a operational configuration, where the rear of the climate control unit is shown.

FIG. 9 is a perspective view of the interior of the climate control dwelling of FIG. 8, wherein the front of the climate control unit is shown.

DETAILED DESCRIPTION OF AN EMBODIMENT

The present invention, in a preferred embodiment, provides a portable climate controlled dwelling and method of use. In particular, the present portable dwelling is designed to receive a small air conditioning and/or heating unit in a reversible manner. To this end, the dwelling can be used with or without the climate control system without there being a hole in the side of the dwelling through which the external elements can enter. In preferred embodiments, the present dwelling can be used with any conventional air conditioning or heating unit, however, a combined heat and cooling unit such as the Model CAH12WRL manufactured by Crosley®, is

preferred. It should be kept in mind that though the combined unit is preferred, the present inventor has discovered that the approximate 11,000 BTU output of the Crosley® unit is not required. The optimal output for most standard tents is in the range of about between 5,000-
5 6,000 BTU's.

In the pre-manufactured portable climate control dwellings, the aperture is resealable through conventional means including but not limited to adhesives, snaps, zippers and Velcro®, provided the seal is water resistant. Also, in alternative embodiments, the boot that
10 partially covers the climate control unit may be removable provided that when it is reattached is sufficiently prevents the climate control unit and the interior of the tent from being exposed to moisture.

In the embodiments that provide a kit for after-market modification of existing tents, the kit includes a template that allows
15 the user to create a resealable window in the tent through which the conditioned air travels from the climate control system into the living space of the tent. The tent and climate control system are coupled together with a flange that can be adhered to the tent using conventional means know in the art, including but not limited to
20 adhesives, snaps, zippers and Velcro®, provided that the seal is water resistant.

Making specific reference to the figures where like numbers refer to like parts. Specifically, FIGS. 1-2 show an exemplary portable climate control unit 100 such as an air conditioner and/or heating
25 device. In one aspect of the invention, the climate control unit 100 comprises a front 110, back 120, top 130, bottom 140, left 150, and right 160 sides as is customary with conventional units. The units 100 may vary in dimensions based on the size of the dwelling to be heated or cooled.

In order to facilitate transport and placement of the climate control unit 100, the present inventor provides a carrier 200 that can be adjusted to fit a variety of sizes of units 100. The carrier 200 preferably comprises at least one strap 210 that raps around the unit
5 100 from front to back or from back to front, whichever the case may be. Additionally, at least one strap 220 is provided that runs substantially perpendicular to the at least one strap 210. When additional straps 230 are provided, enhanced support and portability is provided. Additionally, straps 250 and 260 connect straps 220 and
10 230 on the left 150 and right 160 sides of the unit 100, respectively. The climate control unit carrier may alternatively comprise a strap webbing much like a net to provide peristaltic motion to make carrying easier. Each strap is preferably made from a durable material such as ballistic nylon, canvas, polyester, or microfiber but may be a
15 variety of other materials known in the art.

As discussed above, the present invention provides a climate control dwelling 300 that can be purchased in a complete kit, which comprises the dwelling 300 with a preinstalled boot 440 for receiving the climate control unit 100. In such kits, the kit may also include the
20 climate control unit as well as the carrier 200 and an optional stand (not shown) to elevate the climate control unit 100 to the desired height in the wall of the dwelling 300. As shown specifically in FIGS. 5-9, the dwelling 300 has an aperture formed on one wall thereof for receiving the climate control unit 100. Referring specifically to FIG. 8,
25 the dwelling 300 has a flange 400 coupled thereto for reinforcing the connection of the boot 440 to the dwelling 300. One end of the boot 440 is connected directly to the dwelling 300 or in alternative embodiments, to the dwelling 300 via the flange 400. The flange 400 is most appropriately utilized in aftermarket use of with existing tents

without a preinstalled boot 440. The front 110 of the climate control unit 100 is installed through the open diameter of the boot 440, which has a form fitting edge 530. The edge 530 is form fitting because of an elastic member therein (See FIG. 7). The elastic member is preferably an elastomeric polymer such as a rubber band. The principal objective is to have a pliant edge. Alternatives may include threading a string through the edge 530 to create a draw string closure that can be tightened securely about the climate control unit. The boot 440 forms about the sides of the climate control unit 100 to form a weather resistant barrier between the exterior and the interior of the dwelling 300.

FIG. 9 shows the interior 330 of dwelling 300 with the front 110 of the climate control unit 100 in the operative configuration within the dwelling 300. When the climate control unit 100 is not in use or is not desirable, users would not want a hole in the dwelling 300 that would allow the elements to enter. The present inventor anticipated such an issue and provides a boot 440 that is easy to fold. As shown in FIGS 5-7, the boot 440, in the closed configuration folds upon itself and with mating closures 510 and 520, which are preferably Velcro®, snaps, locks or other coupling means.

For those users that have tents have a desire to use a climate control unit 100 with their existing tent, an after market adaptation system is provided that allows for the modification of an existing tent to receive a variety of sizes of climate control units 100. As shown in FIGS. 3-7, the dwelling or tent 300 is spread out with the exterior 320 showing. It is preferable that the side of the dwelling 300 that will receive the climate control unit 100 is facing upward. A small flange 410 may be ironed on to the side of the tent to identify the location of the boot and/or test the effectiveness of the adhesive. This will also

serve as the location where an aperture is formed for the climate control unit 100. The user can measure the exact height from the ground that (s)he wants to place the climate control unit. It should be kept in mind that the testing step is not required as the manufactured
5 climate control dwellings as well as the after-market adapter kits are quality tested before sale.

Once the appropriate location is identified, the climate control adapter 400 is coupled with the exterior 320 of the dwelling 300. The adapter preferably comprises a flange 460 having four edges 470,
10 480, 490 and 500. Affixed to the flange 460 is boot 440, which has a top flap 420 and a bottom flap 430. The boot 440 tapers from the flange 400 to the elastic edge 530 to form a tube 450 for receiving the climate control unit 100. When the boot 420 is in use, aperture defined by the tube is open, however, when the boot 420 is not in use,
15 it may be closed by mating closures 510 and 520 after or in lieu of folding the adapter 400.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as
20 illustrative, and not restrictive. The scope of the invention is, therefore, indicated by the appended claims, rather than by the foregoing description. All changes, which come within the meaning and range of equivalency of the claims, are to be embraced within their scope.